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Patentanmeldung Nr. Patent application No. Demande de brevet n°

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Der Präsident des Europäischen Patentamts:
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets
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A PROJECT MANAGEMENT METHOD FOR OPTIMIZING IT RESOURCES

Field of the Invention

The present invention generally relates to management of companies doing business with projects involving Information Technology service and / or manufacturing developments; more particularly, this invention aims at optimizing the resources involved in such projects.

Background of the Invention

A project management methodology in a company traditionally improves communication system used between the project components and provides a better control of the schedules by the management. Many project management tools and systems are available today to share developer information and give access to management on the status of the project.

A company doing business with projects needs also to provide to the management tools to measure the project costs. Activity-based costing (ABC) tools are available today as described in the US patent 5,799,286 which discloses an automated management system providing continuous, dynamic and real-time costing information and reports. This solution implies use of data bases and reports helping in management decisions based on project costs.

However, it is strategic today to help, on a broader scope than only communication or costing, international companies to optimize their resources. For instance company doing business with IT manufacturing and / or service development projects, the choice of skills to be developed by technical employees or the choice of computer sites and network equipment are strategic for the success of projects. Also, the geographic localization of these sites for equipment and competence are highly strategic. As a matter of fact, companies having an international coverage have to face country differences such as cultural behavior including various languages or legal constraints. The organizational choices include also management structure.

In the outsourcing market key players such as EDS, CSC, Debis, Cap Gemini have to develop a method for integration of IT functions, both physically and logically, ranging in size from complete country infrastructures down to individual client sites.

Furthermore, there is a need for a method helping project management to develop strategic values for the company according to the business trends. The company resources used in current projects should be analyzed to allow adjusting the organization of the resources to the business trends.

Summary of the Invention

The invention consists in a project management method for optimizing Information Technology sites including skilled people groups, computer equipment, said method comprising the steps of determining, according to the project business need, the number of said IT sites spread over a same geographic area, determining, according to the project technical need, the skilled people groups and the computer equipment required inside the geographic area, grouping and distributing, according to technical constraints, said skilled people groups and computer equipment over said IT sites inside the geographic area and, consolidating the IT sites of the geographic area with their skilled people groups and computer equipment by considering the project cost parameters and the geographic site location peculiarities.

The method invention further comprises a step of process and method standardization before the consolidating step, said process and method standardization step comprising the steps of listing the processes and methods used in the IT sites as determined, listing criteria allowing assessment on the efficiency of said processes and methods in IT sites as determined and according to the skilled people group and computer equipment as determined, grouped and distributed, determining the best processes and methods according to the value of said criteria and, implementing the best processes and methods in the IT sites as determined.

The method may also have the step of determining the best processes and method comprising the following steps of entering in a data base the value of said criteria, creating with a graphic user interface an image of the evolution of the value of each criteria and analyzing the images of said criteria for determining the best processes and methods. The

use of data base and graphic user interface allows to insert feedback loops to improve the standardization step.

One advantage consecutive to the standardization of procedures and practices across a wide geographic area makes the transfer of workload easier, reduces errors and allows the organization's clients to be served the same way across international boundaries.

The consolidation of physical sites produces cost savings as site support costs are reduced although such savings have to be weighted against the cost incurred by moving staff and paying off leases and similar expenses.

A further advantage of the method is that it can be adapted to any type of client it is not industry-specific and may include among company resources, manufacturing sites and support.

Brief Description of the Drawings

FIG. 1 illustrates the grouping of project resources in a geographic cell according to the present invention;

FIG. 2 illustrates the sequential phases of the method according to the present invention;

FIG. 3 illustrate the management organization of a project comprising more than one geocell according to step 8 of phase 1 of the present invention;

Fig. 4 illustrates the feedback loops of phase 2 of the method according to the present invention;

Fig. 5 is the print of a project management tool where all the steps of the preferred embodiment of the invention have been entered with a planned timing;

Fig. 6 illustrates an extension of the geocell organization, according to the present invention, from a country level to Europe.

Description of the preferred embodiment

Figure 1 shows an organizational scheme obtained by applying the method of the preferred embodiment on a company making business with IT projects. As an example, the project may consist in creating in Europe a support for clients having signed with the company contracts of outsourcing services. The company has to provide to the clients a hardware installation and a remote support. The project starts with company resources already installed but the process of decisions, when applying the method of the preferred embodiment, may lead to the creation of new sites or relocalization of existing sites through a process of standardization and integration. Figure 1 shows a logical and physical organizational of the various company sites participating in the realization of a project. The different sites cooperate to the realization of a same project, they form a geographic cell, a geocell. There is one geocell per project or more than one geocell, one per sub project, inside a large project. For IT projects, the geocells includes support centers data processing equipment, management project office spread over geographic areas. In companies including manufacturing activities the geocells include the manufacturing plants. To each geocell is associated a single logical management structure and a unique management system. The parameters taken into account in the method of the preferred embodiment for optimizing the company resource implementation are the difference of culture, laws, language etc... In Figure 1, the project taken as an example uses

European resources. The executive of the geocell (100) are located in Sweden and the project office (145), temporary until the end of the execution of the method of the preferred embodiment, is located in France. The first operational center of the geocell is the Server operation support comprising system programmers, Hardware & facilities, operations tape and print pools. The Server operations support is located in England (145). The second operational center is the deskside location support which is located in Spain (135). The deskside location support comprises the Helpdesk, the desckside support the procurement department and the different location support. In this geocell, the people management and Human resources departments are located in Italy, this is the resource management center (125). The service management (120) is in Germany. In this site are located the service analysts and the client managers. The business operations center responsible for the finance, planning, security and asset management is in Italy (130). The new business central point (115) is in Denmark, this site provides the solution design, collects the requirements and handles the project management after the geocell project office is closed and up to the end of the project. The decisions leading to the realization of an organization as illustrated in Figure 1 are taken by the management in successive steps constituting the method of the preferred embodiment.

The method of the preferred embodiment aims at defining a geographical area, the geocell, comprising basically operational sites such as data processing centers and support centers. This method is executed in four phases as illustrated in Figure 2. Phase 0 is for defining a priori the operational site locations contained in the geocell. To start a project the company generally uses existing structures in terms of support centers and IT resources. The geocell definition is strategic and this first phase is highly related to the knowledge of the business of the company. This first phase

starts the method by providing an assumption of what should be the best geographic implementation for the different project resources. The method, in its preferred embodiment, will complete the definition during the following two phases and will consolidate the resulting organization during the last phase (phase 3), phase of consolidation.

Phase 1 is for performing the organizational integration. The integration may lead to immediate wins if more than one organization is merged with one other organization. In this phase the geocell equipment and technical people competence are defined as well as the project management and the definition of which resource remains local or is centralized.

Phase 2 is for standardization: this is a strategic phase in the method as it is a step for validating and optimizing the choices of the previous phases. By evaluating the processes which will be based on the physical and logical structures previously defined, this phase generates the most ambitious savings. With the use of a data base, a graphic user interface to visualize the data, a feedback loop in this phase improves the benefits expected during the execution of this phase.

Phase 3 is for the physical consolidation of the geocells: ; at the end of phase 3, the resources of the company for the project are strategically implemented. At the end of the method a unique geocell is defined for the project or more than one geocell, one per sub project, if the project is splitted into sub projects. The geocells are consolidated for the realization of the project up to its end.

In a same phase or between phases of the method, some steps require that earlier steps have been completed before they can produce any useful output. Other steps have no precursor. Depending on the exact characteristics of the

organization performing the consolidation at the end of the process, it may be possible to run steps in parallel in order to shorten the total elapsed time taken by the project. Feedback loops are also implemented to improve step outputs during the execution of the method as in phase 2.

The time taken to perform each step is highly variable and depends on the complexity of the consolidation being attempted and the nature of the original organization. Rather than give an exact elapsed time for each step, the step descriptions give a relative time plus actions or events which will make a significant impact on the duration of the step.

The four phases contains a total of twenty-one steps in the preferred embodiment. Phase 0 contains the first seven steps most of which have to be complete, or approaching completion, prior to any general announcement of the formation of a geocell. As it occurs prior to geocell announcement there are rarely any savings as a result of phase zero.

Phase 0 starts with a first step, step 1 to determine the number of geocells this is the most important step in this phase. The number of geocells required depends on a number of factors both within the company and externally. Internal factors include market reach, future strategy, the physical location of existing sites and the corporate culture. External factors include the political situation, economic factors, local language and regional legislation.

If the consolidation exercise includes several different countries, it is not necessary for countries in a geocell to be physically adjacent although too many geographical divides does mean that communications will be harder in the future.

The result of this step is an exact definition of the scope of the geocell or geocells.

A prerequisite to this step is a thorough understanding of the business environment, future business direction and the social and political environment in the areas.

The duration of this step is variable depending on gaps in knowledge and the commitment of senior executives.

Step 2: Appoint geocell executives

Each geocell requires a senior manager or executive (the exact reporting level will depend on the culture of the organization) who is dynamic, visionary and able to see the wider picture across the entire geography of the geocell.

Any savings imposed on the organization 'from above' will probably be divided between geocells at this point.

A prerequisite to this step is Board level buy-in. The output from step 1.

The duration of this step is, assuming a high degree of board-level buy-in, reasonably quick.

Step 3: Produce financial and head count baseline

In order to measure future savings and understand the business at a geocell level a financial and head count baseline is required for the entire geocell area. There are several key requirements for the baseline data, namely:

- Collecting the data is not a single, unique operation. The baseline data will be continually updated and must therefore be stored in a medium capable of accepting updates with enough control around it to prevent either unauthorized tampering or errors resulting from multiple updates.
- Depending on the diversity of the component parts of the organization, it may be necessary to perform a

rationalization exercise during this step to 'translate' local names and skill descriptions into a common format.

- The data collection mechanism needs a way in which it can be coordinated with the appropriate organization accounting mechanisms such ledgers and accounts payable. It may not always be possible to perform exact one-to-one correlations between geocell data and organizational ledgers but the exceptions should not be numerous. An agreed mechanism for resolving any mismatches is highly desirable.
- If the geocell covers an area in which several currencies are used, an agreed mechanism of converting to a common currency is required. Although many multinational organizations have a 'house currency' it may be more convenient to use another base in certain situations. The baseline needs to be insulated in some way from currency fluctuations which can make measuring the real savings almost impossible.

A prerequisite to this step is the output from step 1. Probably names from step 2 (although the process can start prior to executive appointment there is no accountability or ways to influence more reluctant parts of the organization until the executive is in place). Staff to consolidate and correlate the data. A central collection point defined.

The duration of this step depends on scope of the geocell, willingness of different sites to work together and the degree of commonality already existing in the reporting and accounting of various geographies. Theoretically this can be a very quick step, in practice six elapsed weeks is a more reasonable estimate.

Step 4: Key support staff

It is necessary to put key support staff in place prior to performing any consolidation or geocell project work. The project offices are defined more exactly in steps five and

eight but there are other staff who will need to devote considerable time and effort behind the scenes. The number of people required will depend on the size and scope of the geocell organization. The roles which need to be covered are:

- Head count and resource tracking as defined in step 3
- Communications, including the external press office
- Client interfaces (if applicable)
- Legal
- Human Resources
- Procurement

It is not necessary for all these roles to be filled full time, especially in the earlier portions of the project duration. Named resources are required, potentially at short notice as the project develops and it is essential to agree who will be responsible for supporting which function in advance.

A prerequisite to this step is the output from step 1 and possibly the executive name from step 2 (for the same reasons as it is needed for step 3).

The duration of this step depends on the degree of centralization of the functions within the existing organization and the scope of the geocell geography. If the consolidation is within one country this step will be quick. If it is multinational the step will be more complex.

Step 5: Set up central project office

This step is optional as specific to certain situations.

A central project office is only required if the plan involves the creation of more than one geocell. If the consolidation is into a single geocell this step is not needed

as the actions performed by the central project office are not required and the local functions will be found in step eight.

The role of the central project office is to coordinate the actions of individual geocell project offices, consolidate statistics and reporting for senior management, understand and facilitate common plan items, ensure all geocells are aware of the actions of others and the likely consequences and make sure that lessons learned in one geocell are communicated to the others.

The central project office requires a leader with easy access to executive level management and one member in each geocell. Although holidays and similar absences need to covered there is little to gain by having additional people from the geocells in the central project office. The central office may also contains communications and administrative resources if the scope of the project so warrants.

A prerequisite to this step is Steps 1 and 2. Maybe step 4 depending on source of project office personnel.

The duration of this step is very quick once the appropriate people have been agreed.

Step 6: Understand Human Resource situation

The human resource background needs to be thoroughly understood prior to making any plans for the geocell (or geocells). Key items which must be understood include:

- The effects of local legislation on employee transfers
- Comparative salary and benefits of the geographical areas involved in the geocell
- Linguistic and cultural differences

The best way to handle this step appears to be for central HR experts, with legal council if necessary, to work with local human resources personnel in order to build a list of effects the local human resources environment will have on the geocell plan process. Where the geocell is completely within one country or a group of closely related countries (eg: USA/Canada, Norway/Sweden/Denmark, Australia/New Zealand, Syria/Jordan) the resulting list of differences which need to be taken into account may be very short or even nonexistent. In a more geographically diverse environment the list may include:

- Plan delays required to allow consultation between management and workers representatives such as works councils or unions
- Actions required to obtain agreement in partially owned subsidiaries
- Plan items required by law in one country or group of countries but not others
- Differences in local accounting practices, currencies and methods of doing business
- Plan delays required to account for decision processes which rely on consensus rather than individual management
- Employment legislation which means certain employees can not be laid off or reassigned until after a set of predetermined steps have been completed
- The effect of local animosity between parts of the geocell (hopefully this will be taken into account in step one!)
- Diverse legal entities such as partly-owned subsidiaries

A prerequisite to this step is Steps 1 and 4. Steps 2 and 3 are helpful but not absolute prerequisites.

The duration of this step is highly variable depending on geographic scope of the geocell and the degree of HR differences which exist.

Step 7: Produce communications plan

Unless there is only one geocell - in which case this step may optionally be absorbed into step 8 - it will be necessary to provide some kind of overall communication plan for the activity. The communications plan has several elements namely:

- Communications within a geocell
- Communications about common interests across all geocells
- Communications to external organizations such as clients and suppliers
- Corporate media communications

What is included in the scope of the communications plan, the means of delivery (e-mail, road shows, intranet etc) and the data feeds into the communications office will depend on the scope of the geocell and the culture of the organization. Previous uses of this methodology have shown that there are three distinct stages to the communication offering and the primary role of communications varies in each phase.

- Geocell announcement. Defines the geocells and lets employees involved know what is going on. The primary role of communications in this stage is to inform and reassure during a period of change.
- Ongoing plan execution. Regular status reports allow employees to make sense of the events happening around them. The primary role of communications at this point is to help build a shared sense of community. Because of the rate of change in the organization it can be difficult to obtain data feeds during this phase and it may be necessary to allow time to pester the project offices for data.
- Termination. Signals the end of project mode and a return to 'business as usual' running, outlines the savings made and what this means in the future. The primary role of communications in this phase is informative and (hopefully!) congratulatory.

It is important that once the geocell project finishes, a means of communications is left in place to allow future team building and ongoing data cascade.

A prerequisite to this step is Step 4. Step 5 if applicable. Step 6 is helpful in developing the strategy for communications but not an absolute prerequisite.

The duration of this step is reasonably rapid since the activity is 'stand alone' once the prerequisite steps are in place.

Phase 1 defines site contents. In this phase is performed the organizational integration. The main steps are step 11 and step 13.

The organizational positioning phase contains eight of the twenty-one steps which build the management structure and management system. Organizational changes will produce some savings, especially in client-facing positions such as service management.

Step 8: Set up individual geocell project office

The geocell project office contains the overall project manager, any sub-project managers, administrative resources and one person in the central project office, if one exists. The role of the project office is to run the geocell project within the scope of the geocell and, as such, it's first key deliverable is the high level plan on how to complete the remaining steps of the plan.

Although none of the following points are absolute rules it has been found helpful if:

- The overall project manager reports directly to the geocell executive for the duration of the project

- The central project office representative for the geocell and the geocell project manager update each other at least weekly
- The baseline and measurements data collection professionals are included in the project office for the duration of the project
- The project office has rapid access to both HR and legal advice
- The project office has a means of linking with any previously-created geocells to learn from their experiences

If there is more than one geocell it is not necessary for the project offices to be constructed in the same way. Assuming the existence of a central project office, the final project management structure will look like that shown in Figure 3. The central project office (300) has a representative (310) of each geocell. Each geocell project office comprising a representative in the geocell project office, the project (320) and sub project (325) management. The executive groups are the project office executives (330) and the different geocell executives (340). Top executive for the entire project form the senior executives (350).

A prerequisite to this step is that most of phase 0 must have completed by this stage

The duration of this step is very quick

Step 9: Develop new organization

It is up to the geocell executive to develop his or her organization, taking into account the geographic spread of the geocell, existing organization, future plans and internal politics. As discussed in step 10 (below) it is not necessary to define the entire organization, only the high level outline

which should be by functional group rather than geographic position.

Management should be arranged by functional group wherever possible. Direct reports to the geocell executive should have functional responsibility across all geographies or sites included in the geocell or the full level of savings will not be realized. Although some functions are difficult to centralise (for example, service management staff tend to need to be physically near their client) there is no reason why the management of such functions should not be centralised.

A geocell executive may wish to appoint an overall steering committee at this point to review progress of the project. This can be helpful but is not an absolute requirement.

Where there is more than one geocell it is not necessary for each one to have the same organizational structure.

A prerequisite to this step is to have Phase 0 complete or mostly complete. Step 6 is critical.

The duration of this step depends on the politics of the organization and the decision making process. Indecisive executives or those in countries which require prolonged consultation prior to decision making may take a considerable time over this step.

Step 10: Appoint new management team

This step involves fleshing out the skeleton organization created by the geocell executive by appointing specific people into the positions defined. Again, the decision making method and the politics of the organization will determine how long this step takes.

Once the functional managers are appointed, each one needs to further define his or her organization. This will require a lot of input from steps 3, 4, 6, 11 and 15.

The following guidelines have been found to be helpful but they are not obligatory and may not apply to all organizations:

- There should be no more than three layers of management below the geocell executive, regardless of the size of the organization
- The span of control should be maximized
- Management should be arranged by functional group wherever possible. Although some functions are difficult to centralize (for example, service management staff tend to need to be physically near their client) there is no reason why the management of such functions should not be centralized.
- It is desirable to have representation from several constituent countries in the senior management team as this encourages participation across the physical geography and maximizes the breadth of local experience available at senior levels.
- The best appointees do not always reside in the senior levels of the component organizations but may be one level down. Unless the geocell is very small, it is unlikely that people more than one level down will have had sufficient management experience to hold a senior geocell role.
- With a functional top layer of management within the geocell the second layer should generally not be geographically aligned or the full level of savings will not be realized. Service Management, Resource Management and Legal groups are probably exceptions to this rule.
- Most countries require that an employee has an 'in country' career manager for tax and legal reasons. A resource / task

manager split is a viable way around this requirement where it exists.

Depending on the preferred method of working each functional manager may be asked to provide a sub-project manager to the geocell project office.

At the end of step 10 the organization should be complete to the level that each individual employee knows his or her reporting chain both for task and, if different, personal management. The organization will be balanced, understood and within legal and HR guidelines.

A typical organization structure is shown in Figure 1 and has been already commented above.

A prerequisite to this step is Steps 2, 6 and 9 for the management appointment. Input from steps 3, 4, 6, 11 and 15 is required to build the entire organization.

Unless the geocell is very small, it will typically take several months to progress from initial agreement of the high level organization created in step 9 to the completion of this task.

Step 11: Geocell profile

The creation of a geocell profile is essential to the completion of most of the following steps. The profile is a listing of all the resources in a geocell, their location and use. A typical profile will contain at least the following information:

- The size, location and type of all servers, major network termination boxes and key items of hardware
- The software running on each server
- The skill profile of everyone in the geocell plus their physical location and reporting line

- All the clients supported by the services listed above and which components are used to support which ones
- Information on physical sites within the geocell

Some of this data may be easily available - the output from step 3 is helpful in consolidating skills and much of the rest may be available from asset management. However, in some organizations the data is fragmented or so out of date that a complete inventory is required. Once the profile is complete, management will be able to identify what resources are where and which resources are used to support what parts of the business. Isolated skills or equipment will also be easily recognizable.

The following points may be helpful when compiling the profile for the geocell:

- There is no 'right' way to present the data and if there is more than one geocell it is not necessary for all geocells to consolidate their data in the same way. Often the format will be defined by which reports are easily available. However, a common nomenclature and overall framework will facilitate the task, as well as making and additional geocell activity easier.
- The profile leans heavily on the output from step 3, the completion of which is a major help when building the skills part of the profile.
- Asset management is likely to be the prime source of data for everything other than skills. A good asset management method can drastically reduce the complexity of this task.
- The profile data is not static and a mechanism needs to be found to keep it up to date in line with equipment, site or infrastructure changes.
- Where data isn't available within a reasonable time frame it is possible to proceed without it as long as no key decision is based on a simple guess or extrapolation.

- It is helpful to define a cut off level for data below which information need not be collected. For example, it may be sufficient to say that there are 100 desktops at site X, the fact that 93 are Windows 95, 5 OS/2 and 2 Unix may not be necessary. Defining the cut off point for data can also save a lot of time in the process.
- The completed profile will be a key descriptor document of the entire geocell and should therefore be treated with sensitivity. Where security classifications exist within the organization the profile document should be classed as at least confidential.

A prerequisite to this step is Step 4. Data from steps 3, 9 and 10 can be useful but as the profile can take a long time to create there is benefit to kicking off the work as soon as possible.

The duration of this step is highly variable depending on availability and reliability of the source data, the size of the geocell and the number of people available to collate the results. Assuming no major delays collecting data and two people to collate the task will take about a month for a reasonably sized geocell.

Step 12: Integrate 'quick wins'

The profile from step 11 and the output for phase 0 will allow management to identify 'quick wins' - savings which can be made quickly and easily. Although such savings may be very small there are several benefits to taking them sooner rather than later:

- The quick win provides evidence - via the communication process - that the geocell can deliver on its earlier promises
- Depending on the size of the geocell, there are potentially several quick wins available which add together to a

significant saving, especially since the resources are saved early rather than at the later 'logical time'

- By eliminating quickly wherever possible the planning is simplified and there is less chance of a small saving being forgotten

The nature of 'quick wins' will differ from geocell to geocell depending on the social, political and geographical factors. The existing client portfolio and locations of key suppliers and clients may also have an effect. Candidates for quick wins include:

- Resiting or removing single items of equipment
- Adjusting workload and responsibilities where isolated skill groups exist
- Closing or reassigning space in sites with low floor space utilization
- Planning consolidated education rather than on a site-by-site basis

This does not mean that every incidence of the above will automatically be a quick win, but there should be enough potential savings to warrant the investigation.

A prerequisite to this step is the geocell profile from step 11 and phase 0 virtually complete.

Identifying quick wins should be fairly rapid once the profile is available. Implementing them may take much longer especially if some of the delays listed in step 6 have to occur or if it is more efficient to group quick wins for ease of implementation.

Step 13: Determine central .v. local

Once the profile from step 11 is available, it is possible to identify which items can potentially be

centralized. Within a geocell there will always be items which have to remain local and step 13 is where they are identified. At the end of this step the resources available to a geocell will be categorized into four groups:

- Resources which can be centralized. Examples of such resources are servers into server farms, systems programming expertise (although not necessarily the people) or the closure of a small satellite site resulting from decamping its contents into a neighboring large site.
- Resources which could be centralized but where there are convincing technical or organizational reasons why such centralization may be a bad idea. An example of this is where an e-mail server has been located in a specific site to provide e-mail connections between the users of that site in order to minimize bandwidth or improve delivery times. Removal of such a server would severely impact the users of the site and increase bandwidth requirements.
- Resources which could be centralized but where there is a sound cost reason for not moving them. If the cost of moving a resource is greater than the cost of keeping it where it is there is no point considering a move unless a big gain can be obtained elsewhere. For example, if it costs more to move an isolated group of 10 systems programmers than to keep their desks at a remote site the move is pointless unless it has a knock-on saving such as allowing an entire site closure.
- Resources which have to remain local. Examples of such resources are those contractually located on a client site or linked to other equipment which can not be moved.

Once the resources which have to remain local are agreed they may be removed from any further planning.

There may be some non-technical reasons why functions or equipment have to remain local. A list of possible causes is

given in the description of step 6. One possible way to address this is given in the 'lessons learned' section.

A prerequisite to this step is Steps 6 and 11.

The duration of this step is comparatively quick once the profile is available unless there is a prolonged debate about technical effects occurs. An elapsed month should be sufficient time for all but the largest and most complex geocells. This step may run in parallel with step 12 and uses most of the same input data.

Step 14: Develop management system

There are two management systems required within this step. The first is the overall geocell management system which needs to be prepared first either by the project office or the geocell executive's staff group. This management system must be able to support any higher corporate objectives while allowing timely management of the geocell.

The second management system is the one used to support the overall management system which is created by each of the functional managers. Again, these systems may be created by the project office or by staff personnel within each functional group.

The implementation of the management system needs to include the following:

- Interlock with other geocells if required. The management system need not be identical to that in any other geocells as long as they inter link where they have to and all geocells possess a standard form.
- Interlock with the requirements of the organization board or senior management
- Timely reporting and feedback

- A means of managing out of line situations (good and bad) and bringing them back in line where necessary
- A means of allowing for the legal, linguistic and cultural diversity which may exist within the geocell

A prerequisite to this step is Steps 6 and 10.

The duration of this step depends on decision making process but typically rapid for even large and complex geocells

Step 15: Perform skill analysis

Each functional group will need to perform a detailed skill analysis of the people within its scope of control and understand where there are gaps and overlaps. Once understood the information can be consolidated into any quick wins or used to build the lower levels of the final organization. Much of the data can be lifted directly from step 3 but it may be necessary to use greater granularity in this step. Points which have been noted in previous implementations of this step are:

- This step may provide a way of evaluating the suitability of possible second line managers
- It is possible to identify possible quick wins from this step although isolated skill pockets do not always equate to a quick win. Before determining if consolidating isolated skills are quick wins or not, it is necessary to understand the entire local environment - the skill data collected here is not sufficient alone
- In geocells which cover several diverse countries, language issues may force the retention of isolated skill pockets

A prerequisite to this step is Steps 3 and 6 and the first part of step 10.

The duration of this step is related to the completeness of data from step 3 and the size of the geocell. This step may be very quick.

Phase 2 is the standardization phase. It contains three steps of the twenty-one step plan and concerns the consolidation of processes and procedures. This is the phase which realizes most savings as standardization and streamlining often produces considerable productivity benefits.

Step 16: Understand processes and methods

In order to standardize processes it is necessary to understand what processes are in use and for which purposes. In some organizations this may be dictated 'top down' which means that there will be little local divergence. In other organizations each site or country may have evolved its own processes resulting in considerable differences. The questions which need to be answered in this step are:

- Which processes are in use and what do they do?
- Who uses them?
- What tools and methodologies are in place to support each one?

Once these questions are answered, it is necessary to apply the results of step 13 to understand if there are any processes which, for any reason, can not be altered. If so, various aspects of the process may have to be placed out of scope.

A prerequisite to this step is that Phase 0 should be complete. As this step is purely investigative, if the people are available to perform the analysis it does not depend on organizational aspects.

The duration of this step depends on the number of processes in scope and the size and cultural diversity of the geocell this may be a massive task. It is possible to run the three steps in phase two roughly in parallel as long as this step is given a slight head start in order to provide information which can be used in the two following steps. In small organizations where the processes are imposed 'top down' this step may be comparatively simple.

Step 17: Assess processes and methods and understand Best of Breed

Assessment of the processes located in step 16 is a three stage process.

- Determine and agree the assessment criteria. In some cases this may be facilitated by having benchmark data but in many cases it will be open to debate.
- Determine the definition of 'best of breed'. Many processes are unlikely to contain metrics and the definition of which version performs best is often purely subjective. It may be necessary to perform some standardization of terminology and process scope before this task can be performed. There are three tactics which can be used to determine 'best of breed' which are discussed later in this section.
- Determine which processes need to be changed. There are four considerations involved in this decision. Firstly, some processes may be so specialized or so close to the 'ideal' (however that is defined) that there is no benefit to tinkering for the minimal improvement which will result. Secondly, it is possible that later events will make the need for change obsolete (for example, there is little benefit to changing the problem management process at site X if site X will be closed in the next three months). A clear set of priorities by comparing the entire plan is therefore needed. Thirdly, a process may be closely inter linked with other methods and processes within the geocell so that any

change will have a widespread disruptive effect. In such cases the additional disruption may prove to be a barrier to any change of the original process, however nonstandard it is. Finally, it could be that the process is used by and affects so few people that standardization simply isn't worth the effort.

The three tactics which can be used to standardize on the 'best of breed' are:

- Where processes are essentially imposed from elsewhere, whether this is higher up the organization or from an external agency, the imposed process is the best by definition. It could be argued that if there are several geocells the method adopted by the majority is the best even although it is not necessary for different geocells to standardize their processes.
- Where some metrics exist, even if they are incomplete, a more objective method can be used to determine the best of breed. For example, even if a problem management process produces no metrics itself, it may be possible to compare the number of people involved or users perceptions of the fix time.
- Where the main aim is simply standardization to reduce overheads, the most common process is the best. This means that 'the best' is defined as the method used by the majority even if this is in some ways inferior to the alternatives.

There are two ways to assess processes in the geocell. Either a dedicated group of process experts reviews all processes or each functional manager forms a team to review the processes which directly affect him or her. Although there may need to be upfront debates about who owns various cross-functional processes, the second method has been found to be superior in most cases.

A prerequisite to this step is all previous steps except 12, 14 and 15 complete or nearly complete.

This step can involve considerable, occasionally acrimonious, debate and the time it will take should not be underestimated. Even a small geocell may have twenty processes which need to be standardized and it is quite possible for this step to last a year. Fortunately, as stated in step 16 above, it is possible to run this step mostly in parallel with steps 16 and 18.

Step 18: Implement processes

The standardization of processes is a sub project in itself. Standardization can range from minor definition adjustments to the replacement of supporting tools or replacing entire processes with new ones. Which degree of change is needed for which process depends totally on the local conditions within the geocell and can not be predicted. However, some factors may affect the degree of change allowed, namely:

- The resources available to perform the change and any follow on activity (eg: education)
- Disruption to ongoing business. Internal disruption will require management focus and control to prevent it becoming visible to client organizations while the changes are occurring. Practices such as dual running or phased installations may need to be considered to insulate clients from the effects of the change. It may be necessary to proceed at a slower than optimum rate in order to protect the integrity of client-facing processes.

Where the resources are stretched and the disruption is high there has to be a convincing case to take the maximum change option. The advantages and disadvantages of each degree of change are explained below.

If the option is to perform only minor changes, the advantages are a Minimal disruption, a step Quick to perform and a Low resource requirement. The disadvantages are that this solution can only be used when processes are slightly divergent and that it may not provide sufficient standardization to realize savings.

If the option is to perform reworking of tools or implementation methods but no change to basic process, the advantages are :

- A Higher degree of standardization
- It may not require many resources
- It can save license costs
- The support easier once conversion is completed
- The process comparison easier

The disadvantages of reworking of tools or implementation methods but no change to basic process are:

- It can result in a high degree of internal disruption requiring careful management to prevent it appearing in any client-facing situation.
- It needs to retrain some or all users of the process
- It may require knock-on changes in areas which don't really need changing
- There may be language or cultural issues

If the option is to perform major changes, the advantages are:

- A highest degree of standardization hence highest savings in people, time, efficiency, license costs etc.
- A Process comparison easier
- A Centralization simplified

If the option is to perform major changes, the disadvantages are:

- Usually considerable internal disruption requiring management effort to control and insulate clients from the effects.
- Post-change education, documentation etc. can be a big task in its own right
- Requires changes to all interfaces
- May be language or cultural issues

Of course, it is possible than a process will require the highest degree of change in only limited sites or countries within the geocell.

A prerequisite to this step is Step 17 (at least for the processes to be modified)

The duration of this step is highly variable but typically 12 to 24 months for a large geocell. As stated in the descriptions to step 16 and 17, this step can run in parallel with them to a certain extent.

Figure 4 illustrates the use of a data base (420) and a graphic user interface to access the data in a feedback loop performed on the three steps of phase 3. As a matter of fact, during step 16 of defining processes and methods, a list of criteria is defined (400) to measure processes and methods. The criteria maybe the distribution of IT software tools or hardware equipment used, the number of skilled people, etc...Using a graphic user interface, images (440) of the criteria at a given time of the project development are issued (430). During step 17, a step of prioritization (450) is performed, the image of the criteria helping in this prioritization. A standardization is suggested. On the basis of this suggested standardization a review of the criteria characterizing the standardized processes and methods is performed again (400). The collection of data (410), the creation of images (430) and a new prioritization step (450)

are performed again. After performing such a feedback loop, the standardization is improved. Then, the standardization is started as for its implementation (460), with step 18. After this experiment a new review of the processes and methods criteria is performed (400, 410, 430, 450, 460). This later feedback loop should lead to adjustments and a better standardization and thus saving results.

Phase 3 is the final phase which contains the last three steps of the twenty-one which are concerned with physical consolidation. This phase does not usually realize a lot of head count savings but does bring cost reductions associated with the smaller property portfolio. The main step is step 19.

Step 19: Site strategy

This step defines a cohesive site strategy for the geocell. The site strategy is the blueprint used to consolidate physical sites to the optimum number, which may or may not be the same as the minimum number. Factors which affect site strategy are:

- Skills. Where a site has a critical mass of several skills the cost of relocating the skill base can be prohibitive. There is also a danger of the skill base being severely eroded by voluntary severance, especially if there is a range of alternative employers in the proximity.
- Technology. The availability of technology or the cost of transferring it may limit the options available. This is especially true with larger or older equipment which often has more restrictive environmental requirements such as a cooling water supply or humidity control.
- Infrastructure. The quality of supporting infrastructure is critical to a site, especially one containing large numbers of servers. UPS/CPS, dual power supplies, proximity to local transport links, proximity to third party support (eg:

hardware engineers) and the attitude of the local government authority can all be limiting factors, not all of which can be easily overcome.

- Clients. Certain resources may need to be close to client locations. Resources located on client locations are not usually candidates for a move out although it may be possible, with the client's agreement, to move additional resources into the client site. This approach is cheaper but does have associated risks.
- Contractual and legal issues. Legal issues can restrict site consolidation options. For example, there may be legislation which restricts the physical location of operations staff with access to sensitive data (eg: Norway), legislation which controls encryption requirements (eg: the US) or controls on the way personal data is handled (eg: the EEC). There may also be clauses in existing client contracts which limit the options available. While these may possibly be renegotiated, the process can be time consuming.
- Ownership. The ownership of a site is a limiting factor. While the organization may own a site outright it may also be leased, jointly owned or be a client site occupied by the organization's resources. There are unlikely to be any restrictions in the first case but there are possible implications in the others.
- Organization strategy. The organization may require certain sites for the successful implementation of it's future strategy.
- Service considerations. Closure of too many sites leaves an organization unable to recover in the event of a disaster. While the risk may be small, the loss of a significant portion of an organization's IT resources can be fatal in the modern e-business world.
- Social constraints. There are some societies which have a degree of social stratification where there may be considerable political fallout if relocations or closures result in once strata being harder hit than others. The HR

specialists (see step 6) are invaluable in understanding this effect and minimizing the impacts where they occur.

The mechanism used to develop a cohesive site strategy will depend on the organization, the degree of centralization of the existing property portfolio and how widespread the sites within the geocell are. The size of the site clearly determines how easy it is to relocate the resources it contains but it does not automatically mean that small sites should be consolidated into larger ones.

A prerequisite to this step is Phase 0 and most of Phase 1.

The duration of this step depends on the size of the existing geocell portfolio, the decision making process and the number of extraneous external factors. There is no simple correlation between any of these factors and the time taken.

Step 20: Centralize asset management and planning

Centralization of asset control and the associated disciplines of procurement and physical audit can provide large savings in two ways:

- Equipment standardization and reuse is facilitated resulting in lower reorder and support costs.
- The negotiating power of an organization is greater if it negotiates on behalf of a geocell rather than on a site-by-site or country-by-country basis. Savings of up to 60% have been achieved on software costs with certain vendors.

The means by which asset control is consolidated depends on the degree of centralization already present in the organization. It is possible for asset control to be delayed if the supporting financial processes require prior

consolidation. If this is the case, there is a strong case for making any associated financial processes the first ones to be reviewed in phase 2.

The mechanisms required to perform consolidated asset control are likely to be in place for larger assets, such as mainframes, but not for smaller ones - especially disposable ones such as floppy disks. The degree of effort required to centralize control of smaller components, and the quantity of red-tape which can be generated as a result, may be prohibitive to centralizing control of small disposable assets such as printer cartridges or paper. The best method appears to be to appoint preferred suppliers for smaller items and centralize control of larger ones with individual PCs being a reasonable cut off point. Whatever the level of control decided, it is essential that it is agreed by the geocell executive(s).

A prerequisite to this step is Phase 0. Phase 2 for financial services if financial consolidation is required

The duration of this step is depends on the number of resources, the agreed scope of asset control and the decision making process. For a geocell with a variety of sites and currencies, this step will take between six and twelve months.

Step 21: Perform physical consolidation

Once the prerequisite steps have been completed, it is possible to perform the agreed site consolidations. Each consolidation will be a subproject in its own right which may last over several years. Larger consolidation subprojects may require their own project office with associated communications and administrative staff.

If the twenty-one step method has been followed, all prerequisite actions should have been taken and issues such as

HR considerations, overall site strategy and the location of skilled resources will have been resolved.

A prerequisite to this step is Steps 3, 4, 6, 11, 15 and 19.

The duration of this step is highly variable depending on scope and complexity. It may take up to two years to complete the consolidations in a medium to large geocell.

Figure 5 illustrates the project schedule based on the method of the preferred embodiment as graphically displayed by a project management tool such as Microsoft Office 2000, displaying Gantt charts. Gantt charts are the common representation used by the various project management tools. For instance, the duration of phase 0 takes 65 days. The ids from 2 to 9 of the left column represent steps 1 to 8. The tool provides a calendar schedule represented with horizontal bars. This schedule takes into account the dependencies or not of one step on the other according to the step description.

The following plan outlines the key points and uses time durations derived from those actually observed in previous iterations of this method. Tasks 22 (step 18), 25 (step 20) and 26 (step 21) have been truncated for ease of printing. On this plan the overall finish date is in the second quarter of next year.

The plan assumes 5 day working weeks and no intervening holidays. An allowance for local vacations will therefore need to be added into the plan. A moderate degree of negotiation time has been included but in cultures where there is a prolonged decision making process or strict employment legislation some steps - especially steps 6, 18, 19 and 21 - may need to be considerably extended. The plan starts on 1st January in order to make the elapsed times clear.

The project management tools reflects in which order the steps of the method needs to be performed to take advantage of the method.

Table 1 and table 2 gives an evaluation of the expected savings in headcount terms. Table 1 should be used when the environment is essentially homogeneous and table 2 when the environment is more diverse. Homogenous environments share a common language, legal and cultural structure. A typical homogenous environment is the USA where, although each state has a slightly different legal system, there is a common federal framework and language. Another homogenous environment would be where an organization contains subsidiary organizations which, even if not fully owned by the parent organization, share a common legal framework and corporate vision.

Heterogeneous environments contain a diversity of culture, language and political systems and are typical of most of Europe, the Near- and Middle-East, Asia Pacific and Africa.

TABLE 1

Skill group	Typical org.	Phase 0	Phase 1	Phase 2	Phase 3
Technical Support	35%	Nil	10%	20%	5%
Business Management	8%	Nil	Nil	10%	5%
Service Management	20%	Nil	20%	Nil	Nil
Help desk&Desk side	23%	Nil	10%	10%	5%
Operations	10%	Nil	10%	15%	5%
Others	5%	Nil	10%	12%	Nil

TABLE 2

Skill group	Typical org.	Phase 0	Phase 1	Phase 2	Phase 3
Technical Support	35%	Nil	5%	10%	2%
Business Management	8%	Nil	Nil	5%	2%
Service Management	20%	Nil	10%	Nil	Nil
Help desk&Desk side	23%	Nil	5%	5%	3%
Operations	10%	Nil	5%	7%	3%
Others	5%	Nil	5%	6%	Nil

The tables show the main skill groups found in a typical computer organization and the percentage of the total organization which forms each group.

The different kind of skills in each group within a typical computer center are at least eight. The first skill for Business Operations comprises financial specialists, planners and specialists for security - both physical and logical - , business control, procurement, asset management, communications, space planning, Quality Assurance and process management.

The Desk side support skill group comprises technical people for Desktop and cable layers, desktop engineers and local LAN, token ring or ethernet managers. The skill group for Help desk support comprises Help desk agents, first line technical support and user administration people. The skill group for Operations comprises Console operators and operators for tape operations, tape libraries, archives and printers. The skill group for Resources Management comprises People managers and specialists for recruitment and education. The skill group for Service Management comprises Customer facing executives, service managers and service analysts. The skill group for Solutions Management comprises Solution designers; project managers and transition specialists. The skill group of the Technical Support comprises Systems programmers for all

platforms, hardware planners, site facilities planners, technical solution designers and technical planning.

It should be emphasized that the typical organization figures assume a wide spread of available technology. Organizations which are highly oriented towards a particular type of technology, such as mainframe or client/server, will show a skew in these figures.

The last four columns of Table 1 and Table 2 show the expected head count savings achievable expressed as a percentage of the original head count.

It is theoretically possible to continue geocell activity to consolidate still further if this is required. In practice this requires that any intermediate stage of the process is given time to reach an equilibrium and that any intermediate geocells are made as similar as possible to allow further consolidation. Items which may determine the ability to structure by geocell further include:

- Local cultural and legal issues
- Practicality of operations (such as disaster recovery, provision of sufficient local work forces etc.)
- Internal morale and staff issues
- Client requirements

An example of such 'two stage' geocell activity is shown in the diagram of Figure 6 which shows a method applied in two stages a first stage providing a geocell (610) organization for the country individual operations (600) and a second stage to consolidate the organization at the European level (620).

Claims

1. A project management method for optimizing Information Technology sites including skilled people groups, computer equipment, said method comprising the steps of:

determining, according to the project business need, the number of said IT sites spread over a same geographic area;

determining, according to the project technical need, the skilled people groups and the computer equipment required inside the geographic area;

grouping and distributing, according to technical constraints, said skilled people groups and computer equipment over said IT sites inside the geographic area; and,

consolidating the IT sites of the geographic area with their skilled people groups and computer equipment by considering the project cost parameters and the geographic site location peculiarities.

2. The method of claim 1, comprising a step of process and method standardization before the consolidating step, said process and method standardization step comprising the steps of:

listing the processes and methods used in the IT sites as determined;

listing criteria allowing assessment on the efficiency of said processes and methods in IT sites as determined and according to the skilled people group and computer equipment as determined, grouped and distributed;

determining the best processes and methods according to the value of said criteria; and,

implementing the best processes and methods in the IT sites as determined.

3. The method of claim 2 wherein the step of determining the best processes and method comprises the following steps of:

entering in a data base the value of said criteria;

creating with a graphic user interface an image of the evolution of the value of each criteria; and

analyzing the images of said criteria for determining the best processes and methods.

4. The method of claim 3 further repeating, after the step of implementing the best processes and methods, the steps of listing criteria, the step determining the best processes and methods and the step of implementing the best processes and methods.

5. The method of anyone of claims 3 or 4, further repeating, after the step of determining the best processes and methods, the steps of listing criteria and the step determining the best processes and method.

6. The method of anyone of claims 1 to 5 wherein the IT sites of the step determining the number of said IT sites, are spread over more than one geographic area.

7. The method of claim 6 wherein the steps of the method are performed for each of more than one geographic area.

8. The method of anyone of claims 1 to 7 further comprising a step of determining, before the step of determining the project skilled people groups and the computer equipment, the management organization per geographic area.

9. The method of claim 8, further comprising, before the step of determining the project skilled people groups and the computer equipment, the management organization for all the geographic areas.

10. The method of anyone of claims 1 to 9 further comprising after each step, a step of updating a project management tool displaying a time for executing the steps of the method.

A PROJECT MANAGEMENT METHOD FOR OPTIMIZING IT RESOURCES

Abstract

A method for optimizing the Information Technology resources in a project, such as outsourcing services. These resources are Information Technology sites comprising skilled people groups, computer equipment spread over a geographic area. The main steps of the method comprise a step for determining the number of IT sites, a step for determining the skilled people groups and the computer equipment required inside the geographic area, a step for centralizing or distributing said skilled people groups and computer equipment over said IT sites inside the geographic area and a step for consolidating the IT sites of the geographic area. An additional step of standardization of processes and methods can also be is added before the consolidation step. The use of data base and graphic user interface allows to insert feedback loops to improve the standardization step.

Figure 1.

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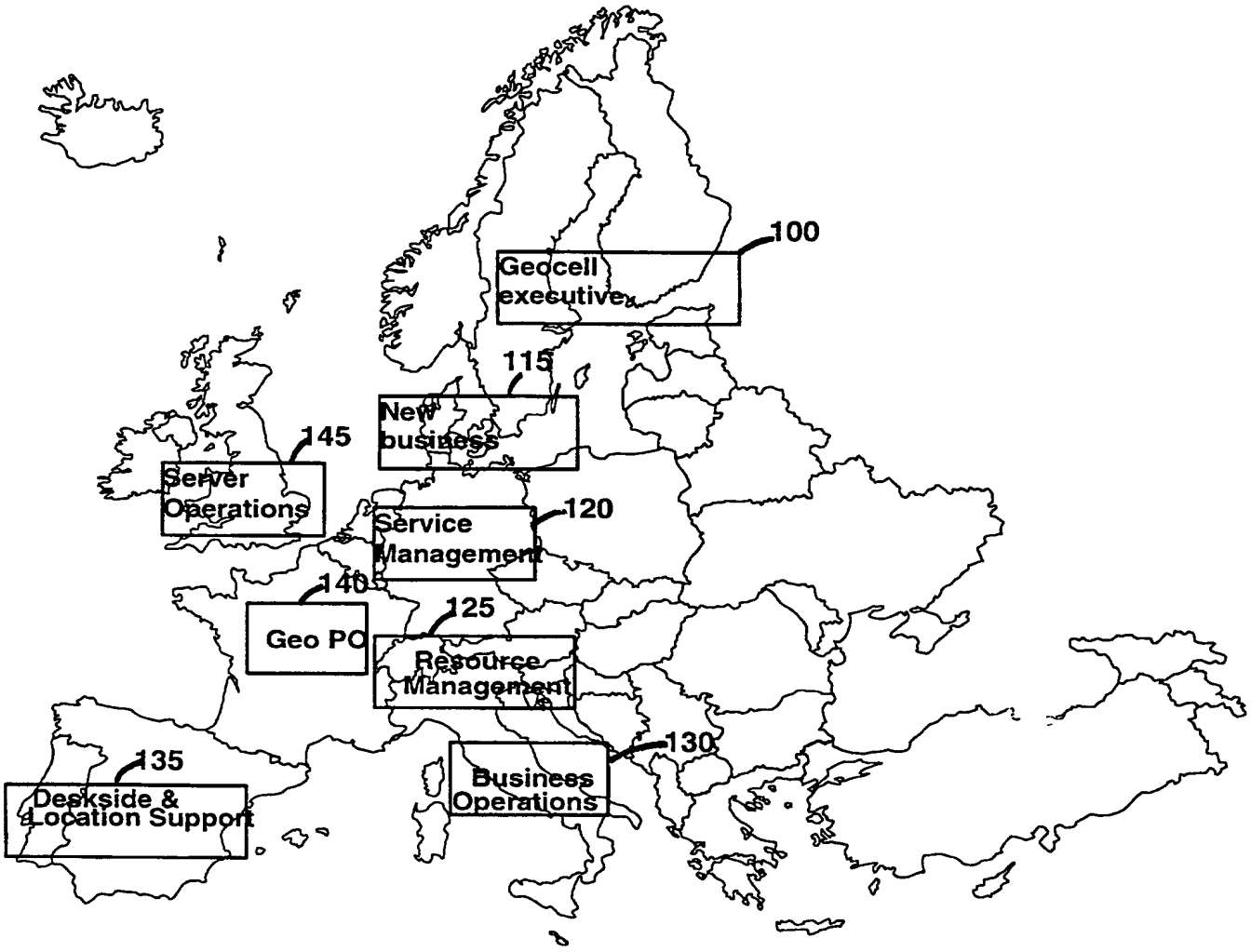

FIGURE 1

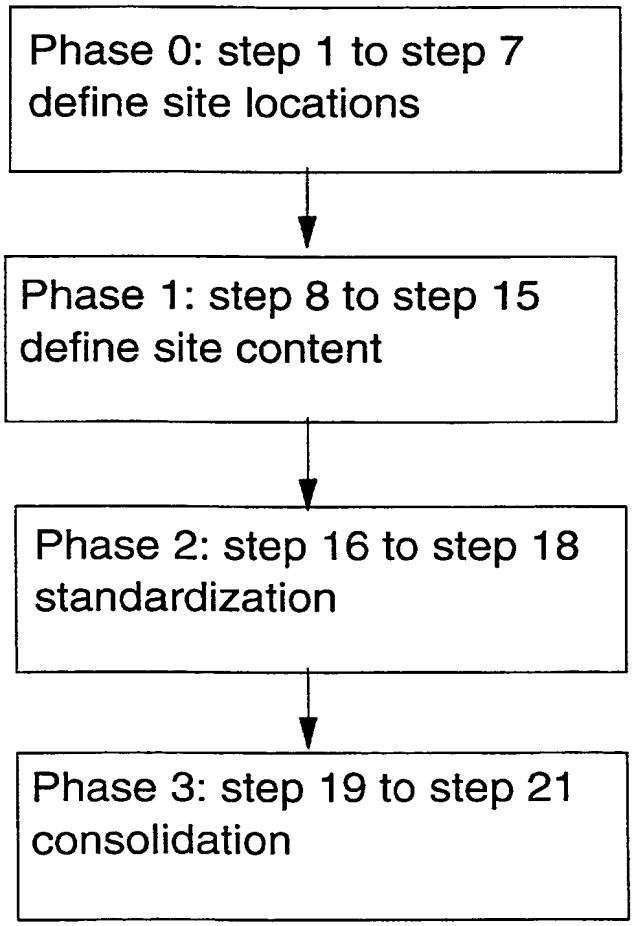
Phase 0: step 1 to step 7
define site locations
Phase 1: step 8 to step 15
define site content
Phase 2: step 16 to step 18
standardization
Phase 3: step 19 to step 21
consolidation

FIGURE 2

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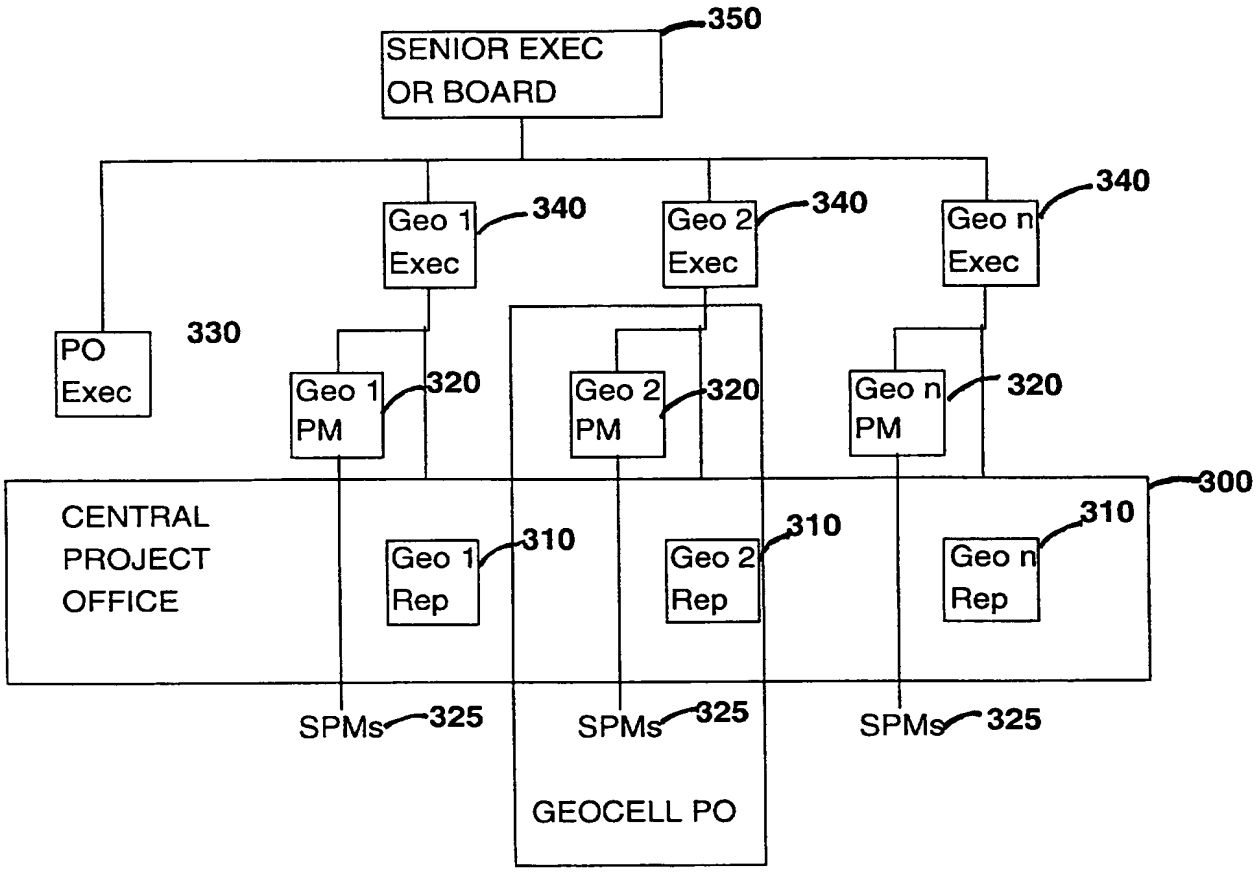

FIGURE 3

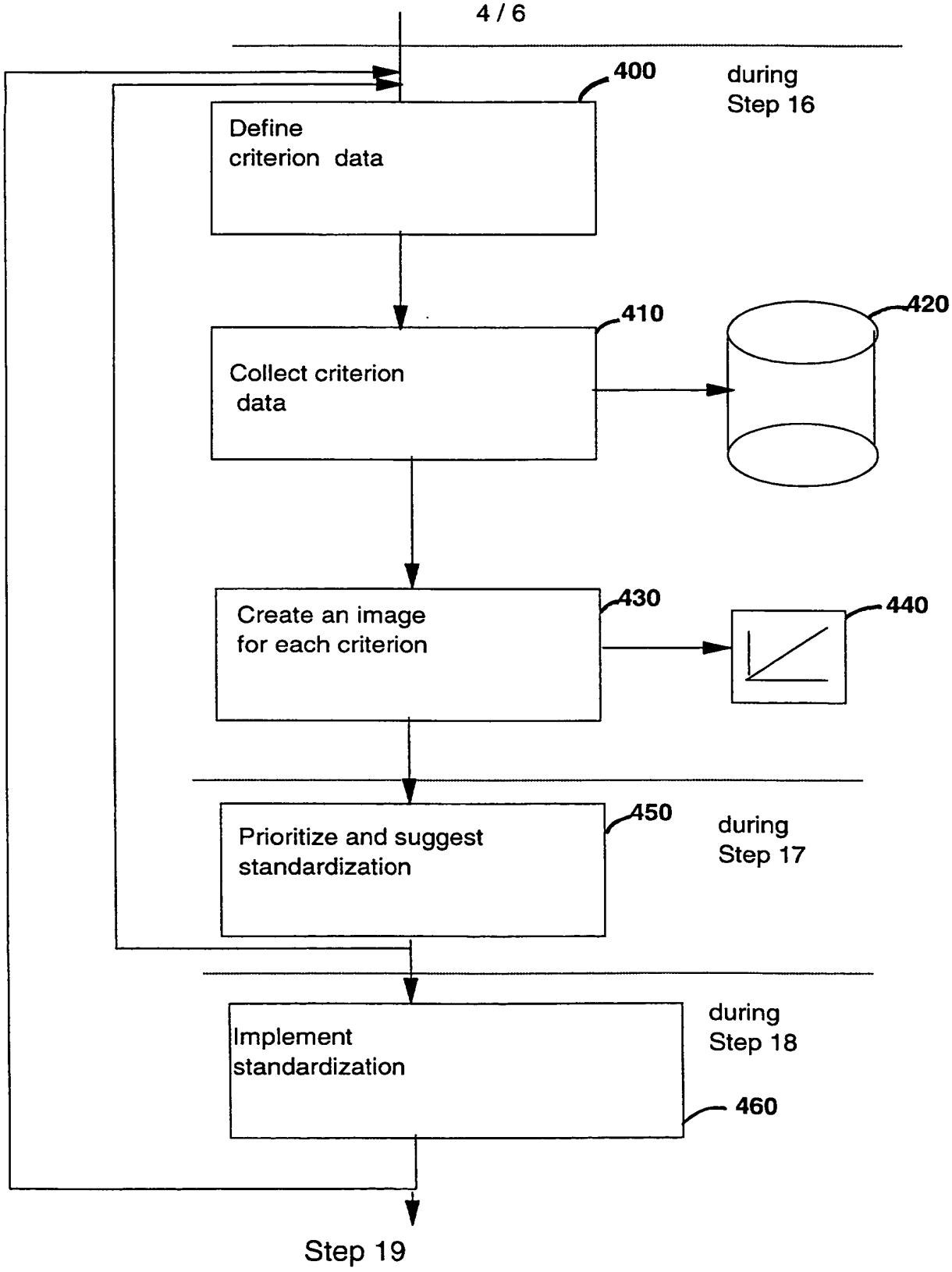
400
during
Step 16
Define
criterion data
410
420
Collect criterion
data
430
440
Create an image
for each criterion
450
during
Step 17
Prioritize and suggest
standardization
during
Step 18
Implement
standardization
460
Step 19

FIGURE 4

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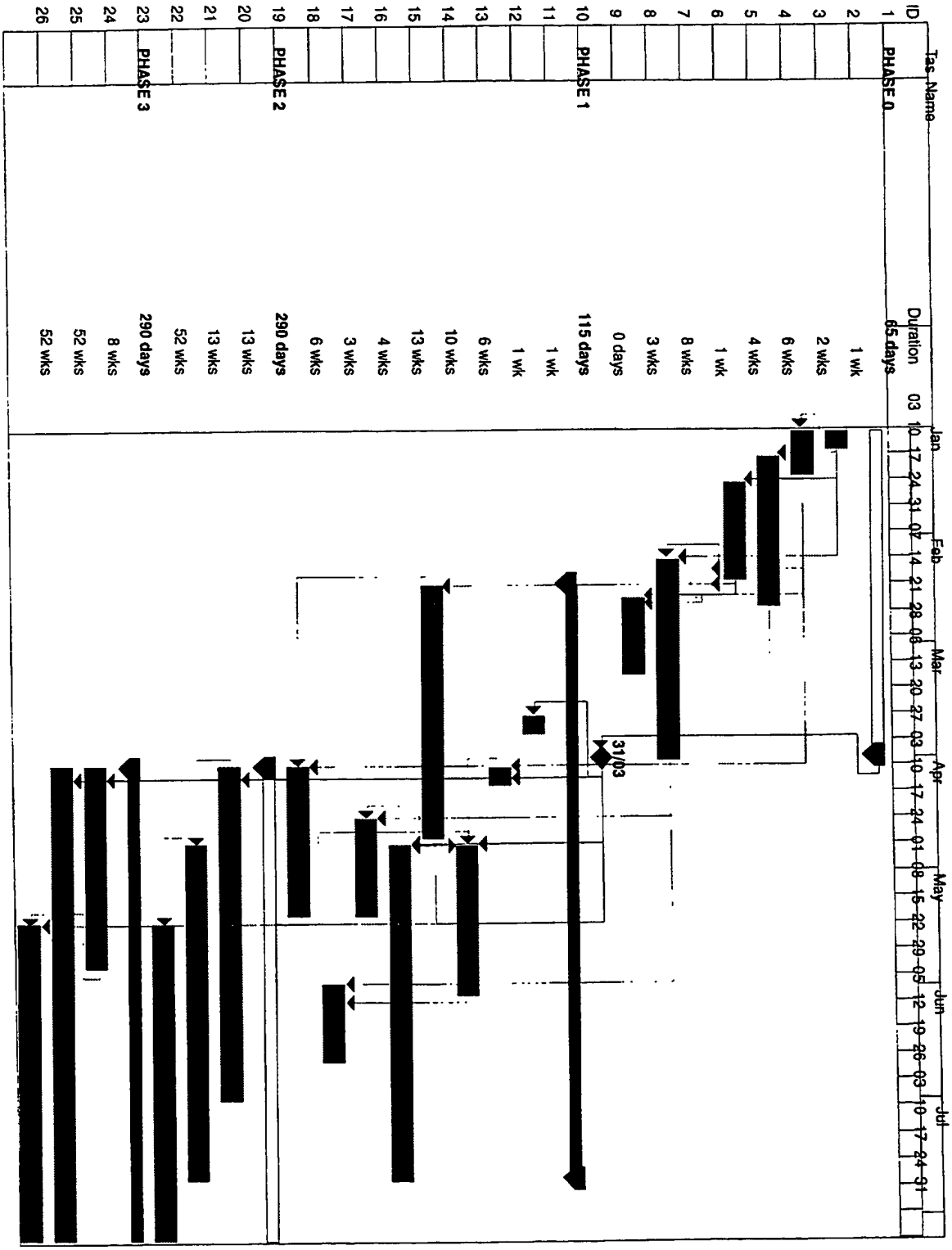

FIGURE 5

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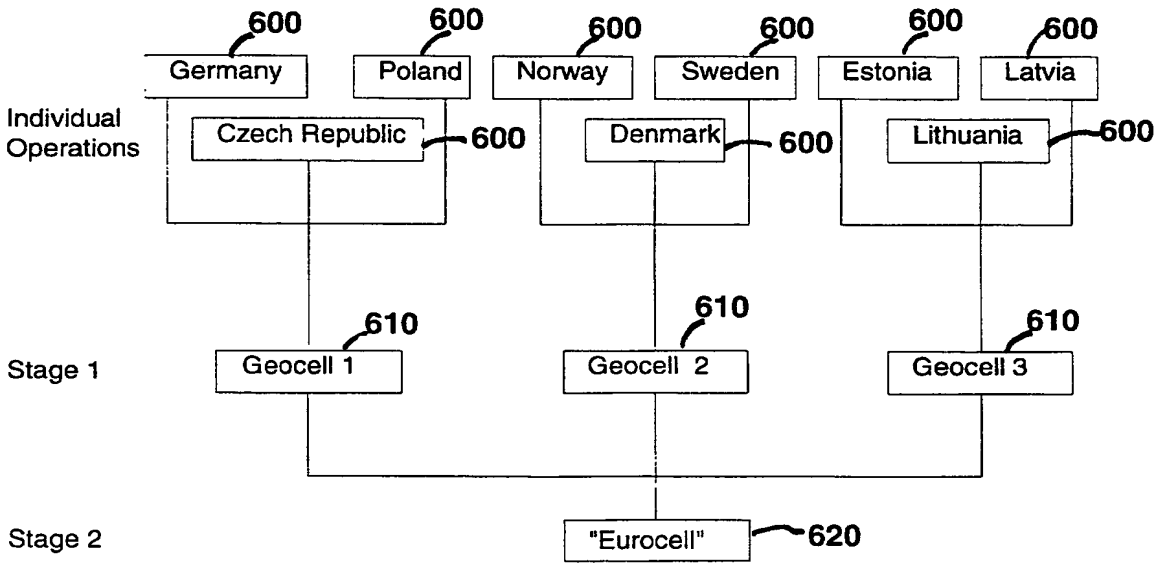

FIGURE 6